Listing of Claims

1. (Currently Amended) An apparatus, comprising:

optical pick-up for recording data;

driver circuit for generating a driving signal for driving the optical pick-up to adjust an optical power level of the optical pick-up; and

control circuit for generating a main pulse and a sub-pulse for the driving signal, the ~~and a~~ sub pulse having a prescribed width that at least partially overlaps the main pulse, wherein the sub pulse is generated at a prescribed amount of time prior to generating the main pulse, the prescribed amount of time corresponding to a predetermined portion of a duty ratio of said sub pulse, and wherein the driving signal rises substantially to a first level during the prescribed amount of time prior to when the main pulse is generated, and the driving signal maintains substantially said first level for a remaining time of the prescribed width of the sub pulse.

2. (Previously Presented) The apparatus as set forth in claim 1, wherein the sub pulse overlaps the main pulse for approximately the prescribed amount of time.

3. (Original) The apparatus as set forth in claim 1, wherein the sub pulse has substantially the same signal level as that of the main pulse.

4. (Previously Presented) The apparatus as set forth in claim 1, wherein the driver circuit is driven by signals indicative of a magnitude and ON/OFF timings of the main pulse and signals indicative of a magnitude and ON/OFF timings of the sub pulse.

5. (Previously Presented) The apparatus as set forth in claim 1, further comprising:

a storage circuit for storing variables indicative of respective start and end times and respective magnitudes of the main pulse and the sub pulse according to sizes of respective recording pits, wherein the control circuit generates the main pulse and the sub pulse using a subset of the variables corresponding to each size of the recording pits.

6. (Canceled)

7. (Previously Presented) The apparatus as set forth in claim 1, further comprising:

a storage circuit for storing variables indicative of respective start and end times and respective magnitudes of the main pulse and the sub pulse according to individual disk manufacturers, wherein the control means generates the main pulse and the sub pulse using corresponding variables of the variables for each disk manufacturer.

8. (Previously Presented) A method for driving an LD (Laser Diode) for recording data on an optical disk, comprising:

checking pre-stored variables according to respective manufacturers and respective recording pits of the optical disk;

generating a main pulse based on the checked variables and a sub pulse having a prescribed width that at least partially overlaps the main pulse, the sub pulse being generated at a prescribed amount of time prior to generating the main pulse, the prescribed amount of time corresponding to a predetermined portion of a duty ratio of said sub pulse;

outputting a driving signal for driving an LD contained in an optical pick-up unit based on the main pulse and the sub pulse, wherein the driving signal rises substantially to a first level during the prescribed amount of time prior to when the main pulse is generated, and the driving signal maintains substantially said first level for a remaining time of the prescribed width of the sub pulse; and

recording the data on the optical disk at an optical power level adjusted by the driving signal.

9. (Original) The method as set forth in claim 8, wherein the sub pulse has substantially the same signal level as the main pulse, and has a pulse width less than a drive period of the LD for a smallest recording pit.

10. (Original) The method as set forth in claim 8, wherein the checked pre-stored variables are indicative of a magnitude and ON/OFF timings of the main pulse, and variables indicative of a magnitude and ON/OFF timings of the sub-pulse.

11. (Previously Presented) A method for recording information on an optical storage medium, comprising:

generating a sub-pulse for driving a recording unit;

generating a main pulse for driving the recording unit; and

controlling the recording unit for recording data based on the sub-pulse and main pulse, wherein the sub-pulse is generated before the main pulse, wherein the sub-pulse is generated a predetermined amount of time before the main pulse which corresponds to a predetermined portion of a duty ratio of the sub-pulse, said main pulse and sub-pulse forming a driving signal that rises substantially to a first level during the prescribed amount of time prior to when the main pulse is generated and the driving signal maintains substantially said first level for a remaining time of the prescribed width of the sub pulse.

12. (Canceled)

13. (Original) The method of claim 12, wherein the duty ratio is 50%.

14. (Original) The method of claim 12, further comprising:

detecting the duty ratio based on timing data stored on the optical storage medium.

15. (Previously Presented) The method of claim 11, wherein said predetermined time is based on a type of optical storage medium or a width of the sub-pulse.

16. (Original) The method of claim 15, wherein said width is equal to T/32, wherein T corresponds to a drive period of the recording unit for a smallest recording pit.

17. (Original) The method of claim 15, further comprising:

detecting said width based on timing data stored on the optical storage medium.

18. (Original) The method of claim 11, further comprising:

reading information from the optical storage medium; and

determining a manufacturer of the optical storage medium based on said information.

19. (Original) The method of claim 18, wherein said information includes a start time of a lead-out area, a start time of a lead-in area or disc id from a table of contents stored on the medium.

20. (Original) The method of claim 18, further comprising:

retrieving timing information corresponding to said manufacturer; and

generating the sub-pulse a predetermined amount of time before generation of the main pulse based on the timing information.

21. (Previously Presented) An apparatus, comprising:

a processor configured to generate a sub-pulse for driving a recording unit before a main pulse for driving the recording unit; and

a driver configured to drive the recording unit to record data for an optical storage medium based on the sub-pulse and main pulse, wherein the processor generates the sub-pulse a predetermined amount of time before the main pulse, said predetermined amount of time based on a duty ratio of the sub-pulse, and

wherein the driver generating a driving signal for driving the recording unit based on the main pulse and sub-pulse, the driving signal rising substantially to a first level during the predetermined amount of time prior to when the main pulse is generated and the driving signal maintaining substantially said first level for at least a remaining time of said overlap.

22. (Canceled)

23. (Previously Presented) The apparatus of claim 21, wherein the processor determines the duty ratio based on timing data stored on the optical storage medium.

24. (Previously Presented) The apparatus of claim 21, wherein said predetermined amount of time is based on a type of optical storage medium or a width of the sub-pulse.

25. (Previously Presented) The apparatus of claim 24, wherein the processor determines a width of the sub-pulse based on timing data stored on the optical storage medium.

26. (Original) The apparatus of claim 21, further comprising:

a reading unit that reads information from the optical storage medium,

wherein the processor determines a manufacturer of the optical storage medium based on said information.

27. (Original) The apparatus of claim 26, further comprising:

a memory that stores timing information corresponding to said manufacturer;

wherein the processor generates the sub-pulse a predetermined amount of time before generation of the main pulse based on the tinting information retrieved from memory.

28. (New) The apparatus as set forth in claim 1, wherein the driving signal maintains substantially the first level throughout the duration of the main pulse.